

Directions: Match the term in Column 2 with the definition in Column 1.

Column 1

- ____ 1. sum of the number of protons and neutrons in the nucleus
- ____ 2. region around the nucleus where the electrons are found
- ____ 3. developed the planetary model of the atom
- ____ 4. vertical column in the periodic table
- ____ 5. neutral particles in the nucleus of an atom
- ____ 6. weighted average mass of the mixture of its isotopes
- ____ 7. positively charged particles in an atom
- ____ 8. table of the elements arranged according to repeated changes in properties
- ____ 9. represents the electrons in the outer energy level of an element
- ____ 10. negatively charged particles in an atom
- ____ 11. number of protons in an atom's nucleus
- ____ 12. horizontal row in the periodic table
- ____ 13. smallest known particle that makes up protons and neutrons
- ____ 14. the smallest piece of matter that still retains the properties of the element
- ____ 15. developed an early periodic chart
- ____ 16. positively charged center of an atom

Column 2

- A. nucleus
- B. electrons
- C. protons
- D. neutrons
- E. quark
- F. atomic number
- G. mass number
- H. average atomic mass
- I. electron cloud
- J. periodic table
- K. atom
- L. group
- M. electron dot diagram
- N. period
- O. Dmitri Mendeleev
- P. Niels Bohr

Periodic Table Basics

Directions: Answer the following questions.

16. Label each part of the Periodic Table square.

8	←
O	←
Oxygen	←
15.999	←

17. How do you determine protons using the above square?

18. How do you determine electrons using the above square?

19. How do you determine neutrons using the above square?
20. What is the difference between atomic mass and mass number?
21. What do you notice about the number of energy levels or shells as you move down a group or column in the periodic table? (H → Li → Na)
22. What do you notice about the number of protons as you move across a period in the periodic table? (Na → Mg → Al)
23. What is the difference between an atom of Helium and an atom of Lithium? (Be specific... "Helium is He and Lithium is Li" is NOT acceptable answer!)
24. In what family would you classify hydrogen? Explain your choice.
25. In what family would each of these elements be classified?

Radium - _____ Tin - _____

Iodine - _____ Cesium - _____

26. Draw the stair-step line on the periodic table.

hydrogen 1 H 1.0079																				helium 2 He 4.0026
lithium 3 Li 6.941	beryllium 4 Be 9.0122																			neon 10 Ne 20.180
sodium 11 Na 22.990	magnesium 12 Mg 24.305																			argon 18 Ar 39.948
potassium 19 K 39.098	calcium 20 Ca 40.078	scandium 21 Sc 44.956	titanium 22 Ti 47.887	vanadium 23 V 50.942	chromium 24 Cr 51.996	manganese 25 Mn 54.938	iron 26 Fe 55.845	cobalt 27 Co 58.933	nickel 28 Ni 58.693	copper 29 Cu 63.546	zinc 30 Zn 65.39	gallium 31 Ga 69.723	germanium 32 Ge 72.61	arsenic 33 As 74.922	selenium 34 Se 78.96	bromine 35 Br 79.904	krypton 36 Kr 83.80			
rubidium 37 Rb 85.468	strontium 38 Sr 87.62	ytrium 39 Y 88.906	zirconium 40 Zr 91.224	niobium 41 Nb 92.906	niobium 42 Mo 95.94	technetium 43 Tc [98]	ruthenium 44 Ru 101.07	rhodium 45 Rh 102.91	cadmium 46 Pd 106.42	silver 47 Ag 107.87	cadmium 48 Cd 112.41	indium 49 In 114.82	tin 50 Sn 118.71	antimony 51 Sb 121.76	tellurium 52 Te 127.60	iodine 53 I 126.90	xenon 54 Xe 131.29			
cesium 55 Cs 132.91	barium 56 Ba 137.33	lutetium 71 Lu 174.97	hafnium 72 Hf 178.49	tantalum 73 Ta 180.95	tungsten 74 W 183.84	rhenium 75 Re 186.21	osmium 76 Os 190.23	iridium 77 Ir 192.22	platinum 78 Pt 195.08	gold 79 Au 196.97	mercury 80 Hg 200.59	thallium 81 Tl 204.38	lead 82 Pb 207.2	bismuth 83 Bi 208.98	polonium 84 Po [209]	astatine 85 At [210]	radon 86 Rn [222]			
francium 87 Fr [223]	radium 88 Ra [226]	* 57-70 Lr [262]	* 103 Lr [261]	* 104 Db [262]	* 105 Sg [263]	* 106 Bh [264]	* 107 Hs [265]	* 108 Mt [266]	* 109 Uun [271]	* 110 Uuu [272]	* 111 Uub [277]	* 112 Uuq [289]								

* Lanthanide series

lanthanum 57 La 138.91	cerium 58 Ce 140.12	praseodymium 59 Pr 140.91	neodymium 60 Nd 144.24	promethium 61 Pm [145]	samarium 62 Sm 150.36	europium 63 Eu 151.96	gadolinium 64 Gd 157.25	terbium 65 Tb 158.93	dysprosium 66 Dy 162.50	holmium 67 Ho 164.93	erbium 68 Er 167.26	thulium 69 Tm 168.93	ytterbium 70 Yb 173.04
actinium 89 Ac [227]	thorium 90 Th 232.04	protactinium 91 Pa 231.04	uranium 92 U 238.03	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [268]	nobelium 102 No [269]

* * Actinide series

27. What are the elements called that touch the stair-step line?
28. Which side of the periodic table are the metals located?
29. Why is hydrogen on the same side as the metals?
30. How many groups are on the periodic table?
31. How many periods are on the periodic table?
32. Why are the Lanthanide and Actinide series elements placed "below" the other elements?